Remarks

Reconsideration of the above-mentioned application in view of the present amendment is respectfully submitted.

The Office Action of December 14, 2005 rejected claims 1, 2, 7, 8, 17, 21, 30, 33, 34, and 36 on the grounds of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 3, 8, 9, 12, and 21 of U.S. Patent No. 6,517,774. A Terminal Disclaimer is accompanied herewith to remedy this rejection.

The Examiner noted an inconsistency between claims 1, 11, and 14 in that the preamble of claim 1 recites "An apparatus" with first and second bones being functionally recited, i.e. "for attaching a first bone to an adjacent second bone...", thus indicating that the claim is directed to the subcombination, "an apparatus", yet the body of dependent claim 11 positively recites a patient's sacrum and fifth lumbar vertebrae as part of the invention. New claim 53 indicates that the applicant wishes to claim the subcombination of the apparatus with the sacrum and the fifth lumbar vertebrae. It is respectfully submitted that new claim 53, which rewrites claim 11 in independent form, cures the above-mentioned inconsistency and is therefore allowable.

Claims 1, 2, 7, 17, 21, 24, 30, 33, and 36 were rejected by the Examiner under 35 U.S.C. §102(a) as being unpatentable over Russian Patent No. SU 1071297 (the "SU document"). As amended, claim 1 recites an apparatus for attaching a first bone to an adjacent second bone, the second bone being separated from the first bone by a space between the bone. The apparatus comprises an anchor having a platform for drivingly rotating the anchor and at least

two helical spikes for embedding into at least one of the first and second bones upon rotation of the platform. The platform has a first surface that is solid and that extends generally transverse to a longitudinal axis of the anchor. The at least two helical spikes project tangentially from said first surface of said platform and extend around said longitudinal axis.

It is respectfully submitted that the SU document does not anticipate claim 1 as amended, as the SU document does not teach the subject matter of claim 1. Specifically, SU document does not teach or suggest an apparatus comprising a platform and at least two helical spikes, wherein the platform has a first surface that is solid and extends generally transverse to a longitudinal axis of the apparatus, and the least two helical spikes projecting tangentially from the first surface of the platform. Rather, the SU document teaches a bone fusion screw with a head with a slit and a spiral-shaped resilient core. As shown in Fig. 4, a head 1 with a length wise slit 2 on its body is connected to three spiral shaped curved rods 3-5 that extend axially from the under-side of head 1. A 'U' shaped spring 6 is inserted through the slit 2 to restore a resilient internal pressure upon the osseous tissue in which the screw is implanted. Without this spring, the screw does not guarantee resiliency under the pressure of the osseous tissue. Therefore, the slot 2 into which the spring 6 is placed is a requisite for functionality of the screw. Accordingly, because the slit 2 is a required feature of the device, the SU document cannot teach or suggest a platform having a solid surface, as recited by amended claim 1. Furthermore, because rods 3-5 extend axially from head 1, the SU document cannot teach or suggest at least two helical spikes projecting tangentially from said first

surface, as recited by claim 1. As stated on page 24 (lines 17-24) of the Specification of the present application, the tangentially-oriented connection of the helical spikes to the platform minimizes bending loads on the connecting portions of the helical spikes during rotation of the anchor and ensures that the force vector resulting from torque and axial force applied to the platform is transmitted along the helical centerline of the helical spikes. Thus, the choice of a tangentially-oriented connection is functionally driven, and is not a mere design choice. Accordingly, the SU document does not anticipate amended claim 1, and allowance of claim 1 is respectfully submitted.

It is respectfully submitted that claims 2, 7, and 17, which depend directly or indirectly from amended claim 1, are not anticipated by the SU document by virtue of their dependence from amended claim 1 and by the specific limitations recited therein. Accordingly, allowance of claims 2, 7, and 17 is respectfully submitted.

Regarding claim 21, the SU document does not teach or suggest a platform including a first surface that is solid, as recited by amended claim 21. Furthermore, the SU document does not teach or suggest at least two helical spikes projecting tangentially from said first surface of said platform, as further recited by amended claim 21. Rather, the SU document teaches a bone fusion screw with a head with a slit and a spiral-shaped resilient core. As shown in Fig. 4, a head 1 with a length wise slit 2 on its body is connected to three spiral shaped curved rods 3-5 that extend axially from the under-side of head 1. A 'U' shaped spring 6 is inserted through the slit 2 to restore a resilient internal pressure upon the osseous tissue in which the screw is implanted. Without this spring, the screw does not guarantee

resiliency under the pressure of the osseous tissue. Therefore, the slot 2 into which the spring 6 is placed is a requisite for functionality of the screw. Accordingly, because the slit 2 is a required feature of the device, the SU document cannot teach or suggest a platform having a solid surface, as recited by amended claim 21. Furthermore, because rods 3-5 extend axially from head 1, the SU document cannot teach or suggest at least two helical spikes projecting tangentially from said first surface, as recited by claim 21. As discussed in page 24 (lines 17-24) of the Specification of the present application, the tangentially-oriented connection of the helical spikes to the platform minimizes bending loads on the connecting portions of the helical spikes during rotation of the anchor and ensures that the force vector resulting from torque and axial force applied to the platform is transmitted along the helical centerline of the helical spikes. Thus, the choice of a tangentially-oriented connection is functionally driven, and is not a mere design choice. Accordingly, the SU document does not anticipate amended claim 21, and allowance of claim 21 is respectfully submitted.

It is respectfully submitted that claims 24, 30, 33, and 36, which depend directly or indirectly from amended claim 21, are not anticipated by the SU document by virtue of their dependence from amended claim 21 and by the specific limitations recited therein. Accordingly, allowance of claims 24, 30, 33, and 36 is respectfully submitted.

The Examiner rejected claims 8 and 34 under 35 U.S.C. §103(a) as being unpatentable over the SU document. Claims 8 and 34 are hereby cancelled.

The Examiner rejected claim 6 under 35 U.S.C. §103(a) as being unpatentable over the SU document in view of U.S. 5,211,647 to Schmieding ("Schmieding"). It is respectfully submitted that, as amended, claim 6 is not unpatentable over the SU document in view of Schmieding.

The combination of the SU document and Schmieding fails to teach or suggest an apparatus comprising a sleeve through which said anchor is insertable, said sleeve configured to prevent said helical spikes of said anchor from deforming during implantation into one of the first and second bones, as recited by amended claim 6. As stated on page 24 (lines 8-13) of the Specification of the present application, a cylindrical sleeve 18 may be placed around the intermediate portions 56 and the connecting portions 54 of the helical spikes 50 and 52 to prevent the helical spikes from deforming radially outward during the initial rotation of the anchor 20.

Schieding teaches a cannulated sheath 1 for protecting a ligament graft 2 during insertion of an interference screw 16 (Col. 1, lines 47-50). The interference screw 16 is inserted into the cannula 13 of the sheath 1, then the interference screw 16 is driven into the graft tunnel 8 between the femur 14 and the bone block 6 (Col. 3, lines 46-50; Fig. 3). The interference screw 16 is a solid metal plug with screw threads 19 surrounding its outside (See Figs. 5 & 6). Thus, the cannula of Schieding is not utilized to prevent the interference screw from radially expanding upon insertion into bone; it is merely a bypass passage used to prevent the external threads 19 of the interference screw 16 from tearing or otherwise damaging the ligament graft 2 during insertion. Furthermore, the SU document does not teach or

suggest a need to prevent the deformation of the spiral-shaped curved rods 3-5 upon insertion into bone, as recited by amended claim 6. Thus, the combination of the SU document and Schieding fails to teach or suggest an apparatus comprising a sleeve through which said anchor is insertable, said sleeve configured to prevent said helical spikes of said anchor from deforming during implantation into one of the first and second bones, as recited by amended claim 6. Since neither reference teaches or suggests the elements of amended claim 6, claim 6, as amended, is patentable over the SU document in view of Schieding. Accordingly, allowance of claim 6, as amended, is respectfully submitted.

In view of the foregoing, it is respectfully submitted that the above-identified application is in condition for allowance, and allowance of the application is respectfully requested.

Please charge any deficiency or credit any overpayment in the fees for this amendment to our Deposit Account No. 20-0090.

Respectfully submitted,

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